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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,115	10/17/2001	Leslie Bruce Wilner	1575.2005-001	9366

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Robert T. Conway, Esq.
HAMILTON, BROOK, SMITH & REYNOLDS, P.C.
530 Virginia Road
P.O. Box 9133
Concord, MA 01742-9133

EXAMINER

OEN, WILLIAM L

ART UNIT	PAPER NUMBER
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2855

DATE MAILED: 07/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/982,115	Applicant(s) WILNER ET AL.	
	Examiner William L Oen	Art Unit 2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 and 31-38 is/are pending in the application.
- 4a) Of the above claim(s) 22-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 31-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 6-21 and 31-38 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Wilner (U.S. Patent No. 4,093,933), hereinafter "Wilner '933".

Wilner '933 teaches a sensor assembly PD for measuring pressure, comprising a diaphragm D having a surface which contacts a medium, the medium applying a

pressure to the first diaphragm, such that the pressure applied to the diaphragm is transmitted as a force to the diaphragm, the diaphragm including a electronic circuit (Fig. 5). However, Wilner '933 does not teach a second diaphragm, wherein the second diaphragm is positioned next to the first diaphragm such that the pressure applied to the first diaphragm is transmitted as a force to the second diaphragm. The second diaphragm serves the purpose of converting the pressure force to an electrical signal. Wilner '933 discloses an integral diaphragm that is able to convert the pressure force to an electrical signal (col. 4, lines 42-44). The mere fact that Wilner '933 teaches an integral diaphragm does not preclude its consisting of two diaphragms. Accordingly, it would have been obvious to one having ordinary skill in the art at the time of the invention to have a first and a second diaphragm in Wilner '933 for the purpose of converting the pressure force to an electrical signal.

As regarding claims 2 & 3: Wilner '933 teaches a ceramic support shaft (see, e.g., Fig. 5 and associated description in the specification) attached to that diaphragm.

As regarding claims 6 & 32, Wilner '933 teaches an assembly wherein the diaphragm is made of silicon (see, e.g., col. 4, lines 63, 64).

As regarding claims 7 & 8, Wilner '933 teaches an assembly wherein the diaphragm has a diameter of about 0.08 inch and a thickness of about 0.005 inch (see, e.g., col. 5, lines 45-49).

As regarding claims 9-13, Wilner '933 teaches an assembly wherein the support shaft is mounted to a hard, machinable, corrosion resistant housing (see, e.g., Fig. 5, and col. 5, lines 45-49).

As regarding claim 14, Wilner '933 teaches an assembly wherein the electronic circuit of the diaphragm is electrically connected to the support shaft (see, e.g., Fig. 4 and associated description in the specification).

As regarding claim 15, Wilner '933 teaches an assembly having a circuit board having a flexible connector connected to the support shaft so that electrical signals can be transmitted between the circuit board and the electronic circuit (see, e.g., Fig. 5 and associated description in the specification).

As regarding claims 16, 17, 21, 33, 34 & 38, Wilner '933 teaches an assembly wherein the diaphragm includes an outer rim and a central boss, the outer rim and the central boss defining an annular recessed region (see, e.g., Figs. 5 & 6 and associated descriptions in the specification).

As regarding claims 18 & 35, Wilner '933 teaches a first strain gage PR1 spaced from the first narrow groove, and a second strain gage PR2 spaced from the second narrow groove.

As regarding claims 19 & 36, Wilner '933 teaches an assembly wherein the first strain gage has an axis aligned substantially parallel to the first narrow groove, and the second strain gage has an axis aligned substantially parallel to the second narrow groove (see, e.g., Fig. 6 and associated description in the specification).

As regarding claims 20 & 37, Wilner '933 teaches an assembly wherein a third strain gage PR3 and a fourth strain gage PR4 are connected to the first and second strain gages to form a Wheatstone Bridge configuration (see, e.g., Fig. 7 and associated description in the specification).

Claims 4 and 5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the modified Wilner '933, as applied to claims 1 & 2 above, and further in view of Wilner (U.S. Patent No. 4,065,970), hereinafter Wilner '970.

Claims 4 and 5 differ from the modified Wilner '933 with the recitation of a support shaft that includes a plurality of grooves disposed about the outer surface of the support shaft, the grooves being spaced apart and extending along the length of the support shaft, and the grooves being coated with a metallic conductive material along the length of the groove. Wilner '970 discloses a support shaft 12 that includes a plurality of grooves disposed about its outer surface, the grooves being spaced apart and extending along the length of the support shaft and the grooves being coated with a metallic conductive material, i.e., the shaft is illustrated as being metallic along the length of the groove (see, e.g., Fig. 2 & 3 and their respective descriptions in the specification of Wilner '970) for the purpose of providing a housing for a pressure transducer assembly. Thus, in view of Wilner '970, it would have been obvious to one having ordinary skill in the art at the time of the invention to have provided a support shaft that includes a plurality of grooves disposed about the outer surface of the support shaft of modified Wilner '933, the grooves being spaced apart and extending along the length of the support shaft, as well as being coated with a metallic conductive material along the length of the grooves. This is obvious because it would have been a simple and expedient modification providing a housing for the pressure transducer assembly of the modified Wilner '933.

Response to Arguments

Applicant's arguments filed 29 April 2004 have been fully considered but they are not persuasive. The thrust of Applicants' arguments is that the instant invention distinguishes over the applied references (Wilner '933 and Wilner '970) because both of the applied references teach single diaphragm devices and that the diaphragms in the applied references are non-planar. Although the first part of Applicants' assertion may have merit, the argument along this line of reasoning is not persuasive because the rejection is an *obviousness type rejection* wherein it is construed by the Office that because, among other reasons, the integral diaphragm of Wilner '933 performs the same claimed function of Applicants' claimed second diaphragm, it would have been obvious to have included a second diaphragm in the Wilner '933 diaphragm-based pressure sensing device, if desired. The second part of Applicants' arguments (contending that the diaphragms of Wilner '933 and Wilner '970 are non-planar) is non-persuasive insofar as the Office disagrees with Applicants' assertion. A cursory glance at the Figures of either reference readily confirms that the diaphragm of Wilner '933 and the diaphragm of Wilner '970 are both planar.

Conclusion

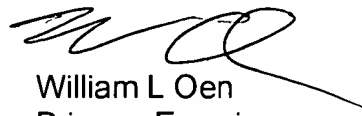
THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William L Oen whose telephone number is (703) 308-5161. The examiner can normally be reached on 10:30 am - 9:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz, can be reached on (703) 305-4816. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-4900.



William L Oen
Primary Examiner
Art Unit 2855

WLO
23 July 2004